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ABSTRACT

Continuous self-monitoring (CSM) was compared with a demand characteristics control condition (non self-monitoring), with intermittent self-monitoring (ISM) and with another control condition. It was predicted that both self-monitoring conditions would produce effects over and above the demand characteristics inherent in the self-monitoring procedure. It was also hypothesized that ISM contains a partial (self) reinforcement component; thus it was postulated that ISM would be superior to CSM with regard to the durability (resistance to extinction) of reactive effects. The target behavior for suppression was speech interruptions (SI). All groups were requested to give impromptu speeches on familiar topics during three periods: (1) 5-minute baseline, (2) 12-minute self-monitoring phase and (3) 12-minute follow-up. The results showed that continuous self-monitoring has significant effects over and above the suppressive effects of demand characteristics. Reliability checks confirmed previous findings that the accuracy of self-monitoring is low. CSM proved to be significantly superior to ISM and both control conditions for decreasing SI and maintaining the decrease. ISM was considered to be a more difficult task which disrupted speech fluency. CSM subjects also received greater practice in noticing and suppressing SI due to the longer time they spent monitoring SI. It was speculated that the partial reinforcement effect may not be applicable to self-reinforcement. (Author)

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THE EFFECTS OF CONTINUOUS VS. INTERMITTENT SELF-MONITORING
ON THE DURATION AND MAGNITUDE OF BEHAVIOR CHANGE

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Self-monitoring has become a popular self-control technique due to the fact that it can produce reactive behavior change. Reactivity refers to the fact that awareness of the process of observing and recording behavior can influence and change behavior. Kanfer (1970) has conceptualized self-monitoring as a servomechanistic system comprised of three components: (1) self-observation, (2) self-evaluation and (3) self-reinforcement. All of the variables which may potentially mediate and modify the process of self-monitoring have yet to be thoroughly investigated, although the importance of certain factors has been demonstrated.

Kazdin (1974a) speculated that the schedule of self-monitoring may affect reactive change. In a test of this proposition, Mahoney, Moore, Wade and Moura (1973) compared continuous self-monitoring with intermittent self-monitoring in a programmed learning task. They found continuous self-monitoring to be superior in the amount of time subjects chose to spend on the task, but groups were comparable in accuracy and number of problems completed.. A follow-up regarding accuracy was not conducted. Thus it was very unclear whether schedules of self-monitoring actually did have differential effects on behavior change (which in this study referred to changes in performance accuracy).

The present study was designed to clarify the ambiguity surrounding the effects of self-monitoring schedules. If, as Kanfer (1970) proposes, self-monitoring contains a self-reinforcement component then it follows that intermittent self-monitoring should

contain a partial reinforcement component. Drawing an analogy from the literature on reinforcement schedules, where behaviors established under partial reinforcement schedules have proven to be the most resistant to extinction, it can be speculated that the reactive effects produced by intermittent self-monitoring should be more durable than the behavior changes established under a continuous self-monitoring schedule. However, when considering the initial magnitude of change it was reasonable to expect continuous self-monitoring to be superior since greater attention is focused on the target behavior in continuous self-monitoring. Thus it was hypothesized that intermittent self-monitoring would produce more durable but less dramatic initial results than continuous self-monitoring (a time X schedule interaction).

In addition, up to the present time there has not been a study which has satisfactorily evaluated whether self-monitoring has an effect over and above the demand characteristics inherent in the self-monitoring procedure. Self-monitoring studies, such as Kazdin's (1974b) experiment, included groups that could be considered demand characteristics control groups; but the proper statistical comparisons were not carried out to discriminate the effects of demand characteristics from the effects of self-monitoring. The present study included a demand characteristics control group and compared it directly to self-monitoring groups.

METHOD

There were 4 conditions in the study represented by 4 groups containing 10 randomly assigned subjects each. The four conditions were as follows:

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1. Continuous self-monitoring condition (CSM)
 2. Intermittent self-monitoring condition (ISM)
 3. Demand characteristics control condition (DC)
 4. Personal Pronouns self-monitoring control condition (PPSM)

All conditions were evaluated over 3 experimental phases: (1) 5 minute baseline, (2) 12 minute self-monitoring phase, and (3) 12 minute follow-up phase, which directly followed phase 2. Conditions only differed with respect to the respective tasks given to subjects during phase 2. All subjects received the same standard instructions during phases 1 and 3.

The target behaviors for self-monitoring were speech interruptions (SI), the pauses, stutters, filler words etc. present in normal speech. All subjects were requested to give impromptu speeches based on a randomized order of topic cards each received. The speeches served to insure a constant flow of speech interruptions. All subjects were instructed to make their speeches fill up the entire time intervals to guarantee that total verbal production would not vary considerably across groups.

During phase 2, subjects in the continuous self-monitoring condition were requested to continuously self-monitor speech interruptions. They recorded on and received feedback from a special digital counter which displayed speech interruption frequency per minute. Subjects in the intermittent self-monitoring condition alternated between self-monitoring speech interruptions for 2 minutes and then personal pronouns for 2 minutes, and so on for all 12 minutes of the phase. The recording of personal pronouns served as a distraction task to insure that those subjects could only intermittently

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self-monitor speech interruptions (i.e., prevention of covert self-monitoring of speech interruptions during those intervals). These subjects received feedback about both aspects of their speech. Demand characteristics control condition subjects were informed (as were both self-monitoring groups) of the experimental interest in the rate and control of speech interruptions, however, they were not told about the process of self-monitoring nor required to do so. The subjects in the personal pronouns self-monitoring control condition only self-monitored personal pronouns in order to control for any non-specific effects of the process of self-monitoring on the standard rate of speech interruptions. These subjects were never informed of the interest in speech interruptions.

During phase 3 all subjects were told to discontinue self-monitoring but to continue giving speeches. At the conclusion of phase 3 all subjects were asked to fill out a questionnaire assessing awareness of speech interruptions and control strategies.

The verbal output of each subject was tape-recorded over all 3 phases. Trained raters tabulated the actual frequency of speech interruptions for all subjects.

RESULTS

Interrater reliability was assessed at .82. The mixed factorial design was analyzed with a 4×3 analysis of variance on speech interruption frequency data. A highly significant main effect for phase ($F=25.001$; $p<.001$) was achieved along with a highly significant interaction effect ($F=4.277$; $p<.001$). Fisher's lsd test was used for making comparisons among all conditions over all phases.

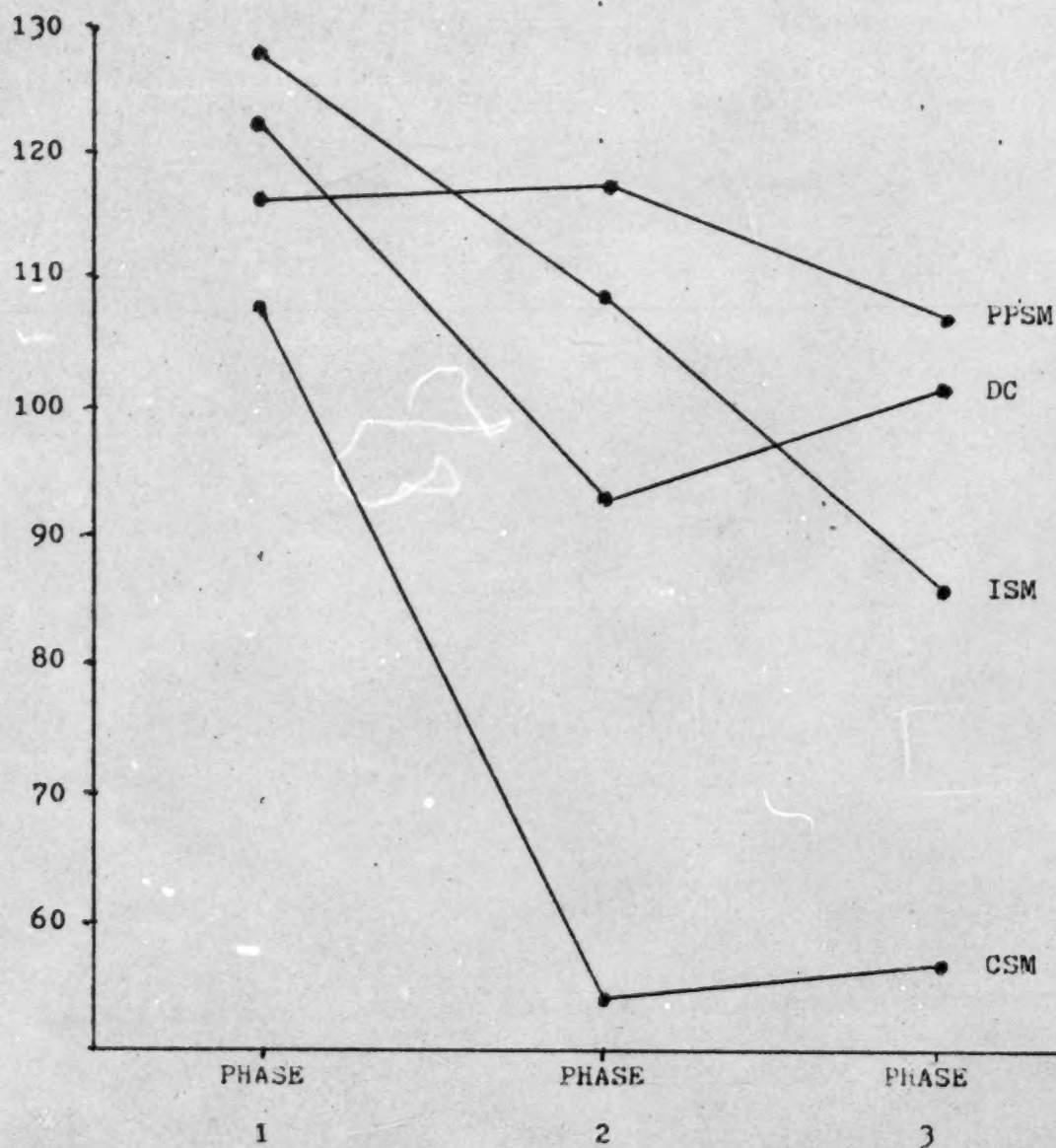
Analysis of phase 2 provided data on differences between conditions in the initial magnitude of change, while the breakdown of phase 3 data analyzed differences in the durability of change after self-monitoring was discontinued.

There were no significant differences between groups during phase 1, thus the groups were comparable in speech interruption production at the start of the experiment. The continuous self-monitoring subjects were significantly superior in speech interruption reduction over the demand characteristics subjects in both phases 2 and 3. The continuous self-monitoring subjects also ^{significantly} surpassed the intermittent self-monitoring subjects in speech interruption suppression during phase 2. A considerable difference still existed between these two groups in phase 3, but this difference failed to reach significance. Continuous self-monitoring subjects were also significantly better at inhibiting speech interruptions than the subjects in the personal pronoun self-monitoring control group, during phases 2 and 3. The intermittent self-monitoring group failed to differ significantly from either control group.

A within groups analysis revealed that all groups, except for the personal pronouns self-monitoring group, did manage to significantly reduce speech interruption frequency at some point during the experiment. Although the demand characteristics group did show a significant drop in speech interruption rate between phases 1 and 2, this failed to differ significantly from the performance of the other control group.

Reliability checks revealed that the accuracy of self-monitoring is quite low, which replicates many previous studies.

MEAN SPEECH INTERRUPTION FREQUENCY PER PHASE



* Phase 1 data (representing 5 minutes of information) was adjusted to be equivalent to data for phases 2 and 3 (12 minutes each).

MEAN FREQUENCY OF SPEECH INTERRUPTIONS PER MINUTE

PHASE CONDITION	BASELINE PHASE 1	SELF-MON- ITORING PHASE 2	POST-SELF MONITOR- ING PHASE 3
CONTINUOUS SELF- MONITORING CONDITION	90.20	45.68	46.67
INTERMITTENT SELF-MONITORING CONDITION	106.40	90.42	73.08
DEMAND CHARACTER- ISTICS CONTROL CONDITION	102.40	77.33	85.50
SELF-MONITORING CONTROL CONDITION	96.80	97.08	90.75

Analysis of the questionnaire data using the Kruskal-Wallis test failed to detect any significant differences.

DISCUSSION

Two major conclusions can be drawn from these results. First, it was apparent that continuous self-monitoring produced reactive changes over and above the demand characteristics inherent in the self-monitoring process. Thus continuous self-monitoring does appear to contain benefits beyond the effects of suggestion.

Secondly, contrary to expectations continuous self-monitoring proved to be superior to intermittent self-monitoring in both magnitude and duration of change. Several reasons were postulated to account for this finding. Intermittent self-monitoring was a complicated task which appeared to disrupt speech fluency, thus attenuating speech interruption^{reduction} during phase 2 for that group. More importantly, subjects who continuously self-monitored received greater practice (i.e., they had twice as much time to self-monitor speech interruptions) at noticing and inhibiting speech interruptions, which could account for some of the difference that remained between the continuous and intermittent self-monitoring groups during phase 3. It was also speculated that the partial reinforcement notion may not be applicable to self-reinforcement.

At this point clinicians using self-monitoring therapeutically and researchers who are seeking to maximize the changes produced by self-control methods are advised to utilize continuous self-monitoring, for intermittent self-monitoring achieves, at best, mediocre results. Continuous self-monitoring may be used with confidence that the method does offer advantages over simple instructions to alter the target behavior.

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